AMENDMENTS TO THE SPECIFICATION

Please replace the first paragraph on page on page 1 with the following amended paragraph:

The invention relates to cross polarization transmission in which signals are transmitted through two polarizations ~~vertical~~ orthogonal to each other, and more particularly to a cross polarization interference canceller for canceling cross polarization interference in those two polarizations.

Please replace the second paragraph on page 1 with the following amended paragraph:

A digital microwave communication equipment is generally designed to operate in two-polarizations transmission in which two polarizations, that is, vertical polarization and horizontal polarization having polarization planes ~~vertical~~ orthogonal to each other, are used in order to enhance an efficiency at which frequencies are utilized. In the two-polarizations transmission, since vertical and horizontal polarizations use a common frequency, if the two polarization planes in an antenna or a space are not ~~vertical~~ orthogonal to each other, signals leak into horizontal polarization from vertical polarization and vice versa.

Please replace the first paragraph on page 2 with the following amended paragraph:

In a cross polarization interference canceller, polarization or polarized wave which is to be compensated for by canceling the cross polarization interference is defined as self-polarization or self-polarized wave, and a wave ~~vertical~~ orthogonal to the self-polarized wave is defined as other-polarization or other-polarized wave. In order to cancel the cross polarization interference caused by the other-polarization, at a receiver, a relation in phase between a cross

polarization interference cancel reference signal transmitted from the other-polarization and the self-polarization signal has to be identical with a relation in phase between the self- and other-polarizations at RF stage where the other-polarization interferes with the self-polarization.

Please replace the first and second paragraphs on page 11 with the following amended paragraphs:

Japanese Unexamined Patent Publication No. 63-31981 has suggested a circuit for canceling cross polarization, including a first synchronization detector to which an input signal associated with first polarization is input, a second synchronization detector to which an input signal associated with second polarization ~~vertical~~ orthogonal to the first polarization is input, and a reproducer which reproduces interference part. The reproducer is comprised of first means for detecting beats of reference carrier waves of the first and second synchronization detectors, second means for multiplying an output transmitted from the first means, by an output transmitted from the second synchronization detector to thereby produce a first pseudo-interference signal, and third means for multiplying a complex conjugate signal in an output signal transmitted from the first means, by an output signal transmitted from the first synchronization detector to thereby produce a second pseudo-interference signal. The first pseudo-interference signal is used for removing a polarization interference signal included in the output signal transmitted from the first synchronization detector, and the second pseudo-interference signal is used for removing a polarization interference signal included in the output signal transmitted from the second synchronization detector.

Japanese Unexamined Patent Publication No. 3-72732 has suggested a cross polarization interference canceller including first means for receiving horizontal and vertical polarization signals transmitted through polarizations ~~vertical~~ orthogonal to each other, second means for detecting a relation between an error signal indicative of interference which is caused by the vertical polarization signal and which leaked into the horizontal polarization signal, and an identification signal obtained from the vertical polarization signal, and transmitting a first interference cancel signal, third means for removing the interference from the horizontal polarization signal in accordance with the first interference cancel signal, fourth means for detecting a relation between an error signal indicative of interference which is caused by the horizontal polarization signal and which leaked into the vertical polarization signal, and an identification signal obtained from the horizontal polarization signal, and transmitting a second interference cancel signal, fifth means for removing the interference from the vertical polarization signal in accordance with the second interference cancel signal, and sixth means for sampling both one of the polarization signals for obtaining the error signal and the other of the polarization signals for obtaining the identification signal through a common clock signal, and supplying the thus sampled signals to the second and fourth means.

Please replace the first paragraph on page 12 with the following amended paragraph:

Japanese Patent No. 2669235 (Japanese Unexamined Patent Publication No. 5-211493) has suggested a cross polarization interference canceller which, on receiving primary and secondary polarization signals transmitted through polarizations ~~vertical~~ orthogonal to each other in synchronization with clock signals, removes a secondary polarization signal part having cross-

interfered with the primary polarization signal. The cross polarization interference canceller includes first means for transmitting a first reproduction clock signal, based on a first base band signal obtained by demodulating the primary polarization signal, in synchronization with a clock signal of the primary polarization signal, second means for transmitting a second reproduction clock signal, based on a second base band signal obtained by demodulating the secondary polarization signal, in synchronization with a clock signal of the secondary polarization signal, third means for transmitting a third reproduction clock signal, based on the first base band signal, in synchronization with a clock signal of the above-mentioned secondary polarization signal part, fourth means for detecting a phase difference between the second and third reproduction clock signals, and controlling a phase of the first reproduction clock signal in accordance with the phase difference to thereby transmit a fourth reproduction clock signal, fifth means for sampling the first base band signal by virtue of the first reproduction clock signal to thereby produce a first digital signal, sixth means for sampling the second base band signal by virtue of the fourth reproduction clock signal to thereby produce a second digital signal, a transversal filter which transmits a cancel signal having the same frequency and amplitude as those of the secondary polarization signal part, based on the second digital signal, seventh means for delaying the first digital signal by a period of time required for the transversal filter to produce the cancel signal, and eighth means for subtracting the delayed first digital signal from the cancel signal to remove the secondary polarization signal part.

Please replace the fourth paragraph on page 13 with the following amended paragraph:

Consequently, the cross polarization interference canceller in accordance with the present invention is designed to include a local phase difference detector which detects a relation in phase between first and second local oscillators associated with two polarizations ~~vertical~~ orthogonal to each other, and an endless phase shifter (EPS) which compensates for a phase difference detected by the local phase difference detector. The cross polarization interference canceller controls a phase of the cross polarization interference cancel reference signal and cancels phase noises included in the cross polarization interference cancel reference signal such that the above-mentioned relations are identical with each other.

Please replace the first and second paragraphs on page 14 with the following amended paragraphs:

Specifically, in one aspect of the present invention, there is provided a cross polarization interference canceller includes (a) first and second signal receivers which receive signals having been transmitted through first and second polarizations ~~vertical~~ orthogonal with each other, (b) first and second local oscillators each of which converts one of the signals into an IF signal, (c) first and second demodulators each of which demodulates the IF signal for producing a base-band signal and a cross polarization interference cancel reference signal, (d) a phase-difference detector which detects a phase-difference between local signals transmitted from the first and second local oscillators, and transmits a phase-difference signal indicative of the thus detected phase-difference, and (e) first and second phase controllers associated with the first and second demodulators, respectively, and each equalizing phases of the base-band signal and the cross

polarization interference cancel reference signal to each other in accordance with the phase-difference signal.

There is further provided a cross polarization interference canceller including (a) first and second signal receivers which receive signals having been transmitted through first and second polarizations ~~vertical~~ orthogonal with each other, (b) first and second local oscillators each of which converts one of the signals into an IF signal, (c) first and second demodulators each of which demodulates the IF signal for producing a base-band signal and a cross polarization interference cancel reference signal, (d) a phase-difference detector which detects a phase-difference between local signals transmitted from the first and second local oscillators, and transmits a phase-difference signal indicative of the thus detected phase-difference, (e) first and second phase controllers associated with the first and second demodulators, respectively, and each equalizing phases of the base-band signal and the cross polarization interference cancel reference signal to each other in accordance with the phase-difference signal, and (f) a reference oscillator electrically connected to both the first and second local oscillators for synchronizing the first and second local oscillators with each other.

Please replace the third paragraph on page 16 with the following amended paragraph:

In another aspect of the present invention, there is provided a method of canceling cross polarization interference, including the steps of (a) receiving signals having been transmitted through first and second polarizations ~~vertical~~ orthogonal with each other, (b) converting the signals having been received in the step (a) into IF signals, (c) demodulating the IF signals for producing a base-band signal and a cross polarization interference cancel reference signal, (d)

detecting a phase-difference between the IF signals and transmitting a phase-difference signal indicative of the thus detected phase-difference, and (e) equalizing phases of the base-band signal and the cross polarization interference cancel reference signal to each other in accordance with the phase-difference signal.